

Serial No.: 09/681,771

Attorney Docket No: MCS-004-01

**REMARKS**

In response to the Office Action dated September 10, 2004, claims 1, 3, 5, 11, 12 and 18 have been amended and claim 2 has been canceled. In addition, new claims 24-27 have been added. Therefore, claims 1 and 3-27 are now in the case. In light of the amendments and arguments set forth herein, reexamination and reconsideration of the application are requested.

**Newly Added Claims**

Before addressing the claim rejections set forth in the Office Action, the Applicants wish to discuss new claims 24-27. The Applicants believe that these claims are in condition for allowance. The reasoning for this belief is as follows:

**Independent Claim 24**

Independent claim 24 of the Applicants' claimed invention includes a method for spelling correction of a phrasal string. The method includes segmenting the phrasal string into a plurality of different segmentations containing sub-strings having a string of characters not restricted to words. The method further includes using dictionary looping to perform a plurality of different searches through a dictionary data structure such that each of the different searches begins at a starting node and continually loops back to the starting node to begin another search in order to compare each of the sub-strings with entries in the dictionary data structure. The method also includes determining a cost for correction associated with each of the plurality of different segmentations, and identifying a segmentation having a lowest cost of correction corresponding to a most probable correct spelling of the phrasal string.

As explained in detail below, none of the cited art contains the Applicants' claimed features of: (1) segmenting the phrasal string into a plurality of different segmentations containing sub-strings having a string of characters not restricted to words; and (2) using dictionary looping. Moreover, in claim 24 the dictionary looping includes the features of: (3) starting each of the different searches at a starting node; and, (4) continually looping back to the starting node to begin another search.

Independent Claim 25

Independent claim 25 of the Applicants' claimed invention includes a method for spelling correction of a misspelled phrasal string containing words, spaces and characters. The method includes dividing the misspelled phrasal string into a plurality of different segmentations containing sub-strings, and performing dictionary looping of a trie containing a phrasal dictionary to search for each of the sub-strings in the trie. The method also includes comparing each of the sub-strings to entries in the trie to find a closest match to the sub-string, and constructing a corrected phrasal string using the closest sub-string trie matches.

As explained in detail below, none of the cited art contains the Applicants' claimed feature of performing dictionary looping of a trie containing a phrasal dictionary. Moreover, dependent claim 26 adds the feature wherein sub-strings are not restricted to a single word. Furthermore, dependent claim 27 adds the feature that the misspelled phrasal string is divided into all possible segmentations. This is discussed in the working example given in the specification at paragraph [0065], lines 3-7.

Because the cited art is lacking the above-referenced claimed features, the Applicants respectfully submit that new claims 24-27 are in condition for immediate allowance.

Section 103(a) Rejections

The Office Action rejected claims 1, 6 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Mogilevsky (U.S. Patent No. 5,787,451) in view of the paper by Ristad et al. entitled "Learning String Edit Distance". The Office Action stated that Mogilevsky discloses all elements of the Applicants' claimed invention except that Mogilevsky "fails to disclose:" (1) "[D]etermining a cost associated with each of the plurality of different segmentations"; and (2) "[I]dentifying a segmentation having a lowest cost corresponding to a most probably correct spelling of the phrasal string". However, the Office Action stated that Ristad et al. discloses these features as follows: (a) page 288, right column,

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paragraph 2 (determining a cost associated with each of the plurality of different segmentations); and (b) page 288, right column, paragraph 2, Section 2.3 (identifying a segmentation having a lowest cost corresponding to a most probably correct spelling of the phrasal string). Therefore, the Office Action asserted that it would have been obvious to one of ordinary skill in the art at the time the invention was made to "have combined Mogilevsky's method of spell checking phrasal strings through segmentation with Ristad's method of determining cost and identifying a lowest cost for a spell correction, since it would have allowed a user to spell check a phrasal string and have the lowest cost option for correction identified."

In response, the Applicants respectfully traverse these rejections based on the amendments above and the following legal and technical analysis. It is the Applicants' position that the combination of Mogilevsky and Ristad et al. is lacking at least one material element of the Applicants' claimed invention. In particular, the combination of Mogilevsky and Ristad et al. does not disclose, either explicitly or implicitly, the material claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations. Further, the combination of Mogilevsky and Ristad et al. fails to appreciate the advantages of this claimed feature. Thus, the Applicants' submit that the combination of Mogilevsky and Ristad et al. cannot make obvious the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations.

To make a *prima facie* showing of obviousness, all of the claimed features of an Applicant's invention must be considered, especially when they are missing from the prior art. If a claimed feature is not disclosed in the prior art and has advantages not appreciated by the prior art, then no *prima facie* showing of obviousness has been made. The Federal Circuit Court has held that it was an error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Moreover, as stated in the MPEP, if a prior art reference does not disclose, suggest or provide any motivation for at least one claimed feature of an Applicants'

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invention, then a prima facie case of obviousness has not been established (MPEP § 2142).

Amended Independent Claim 1

Amended independent claim 1 of the Applicants' claimed invention includes a method for spelling correction of a phrasal string. The method includes segmenting the phrasal string into a plurality of different segmentations, and using dictionary looping to spell correct each of the plurality of different segmentations. In addition, the method includes determining a cost associated with each of the plurality of different segmentations, and identifying a segmentation having a lowest cost corresponding to a most probable correct spelling of the phrasal string.

Dictionary looping "searches for a best match entry in a dictionary by looping through a dictionary data structure containing the dictionary entries" (specification, paragraph [0013], lines 8-10). Dictionary looping "includes performing a number of different searches through the dictionary data structure. Each search begins at a starting node and different searches are performed by continually looping back to the starting node" (specification, paragraph [0014], lines 1-3). By continually looping back to the starting node, spell correcting using dictionary looping can handle overlapping phrases in a phrasal dictionary, such as the phrases "is in the" and "in the back." Moreover, continually looping back to the starting node gives the benefit of context directly by allowing multi-word phrases in the dictionary. For example, these multi-word phrases may include "marilyn monroe" and "monroe washington." Thus, dictionary looping to spell correct a segmentation includes searching a dictionary by continually looping back to a starting node.

In contrast, Mogilevsky merely compares a word in a document to a dictionary without any type of dictionary looping. In particular, Mogilevsky "identifies complete words" (col. 4, lines 51-52) by "transitions between types of characters" (col. 4, lines 53-54). For each of the words identified, "spell core passes the [single] word to spell.dll for verification" (col. 4, lines 54-55; emphasis added). Given this single word to spell

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check, "spell.dll can return a variety of status codes . . ." (col. 4, lines 57-58). In other words, spell correction is performed by parsing out each complete word from the document being corrected and then checking each entry in a dictionary sequentially. Nowhere is looping discussed or suggested.

Ristad et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Ristad et al. merely disclose a system and a method for determining a similarity of two strings. However, the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations is not discussed. Consequently, no motivation or suggestion for this claimed feature of the Applicants' invention is provided. Absent this teaching, motivation or suggestion, Ristad et al. cannot render the Applicants' claimed invention obvious (MPEP § 2143.01).

Mogilevsky and Ristad et al. also both fail to appreciate or recognize the advantages of the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations. More specifically, "[D]ictionary looping allows the dictionary to be compact because the dictionary need not include all potential combinations of all possible phrases that could be encountered" (specification, paragraph [0050], lines 2-4). This means that there is no need to deterministically segment an entire input string into "dictionary words" and then correct those dictionary words. Instead, dictionary looping can handle overlapping phrases in a phrasal dictionary, such as the phrase "is in the" and "in the back." Neither Mogilevsky nor Ristad et al. discuss or appreciate these advantages of the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations.

The Applicants, therefore, submit that obviousness cannot be established since the combination of Mogilevsky and Ristad et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations. In addition to explicitly

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lacking this feature, the combination of Mogilevsky and Ristad et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination of Mogilevsky and Ristad et al. fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Mogilevsky and Ristad et al. does not render the Applicants' claimed invention obvious because the references are missing at least one material feature of the Applicants' claimed invention. Consequently, because a *prima facie* case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claim 1 is patentable under 35 U.S.C. § 103(a) over Mogilevsky in view Ristad et al. based on the amendments to claim 1 and the legal and technical arguments set forth above and below. Moreover, claims 6 and 10 depend from amended independent claim 1 and are also nonobvious over Mogilevsky in view Ristad et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claims 1, 6 and 10.

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The Office Action rejected claims 2, 5 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Mogilevsky and Ristad et al. and further in view of Bernth et al. (U.S. 2002/0087604). The Office Action stated that Mogilevsky and Ristad et al. disclose all elements of the Applicants' claimed invention except that Mogilevsky and Ristad et al. fail to disclose "spelling correcting each of the plurality of different segments using dictionary looping." However, the Office Action stated that Bernth et al. disclose this feature.

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In response, the Applicants respectfully traverse these rejections based on the amendments to claim 1 and the legal and technical analysis above and below. It is the Applicants' position that the combination of Mogilevsky, Ristad et al. and Bernth et al. does not disclose, either explicitly or implicitly, the material claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations. Further, the combination of Mogilevsky, Ristad et al. and Bernth et al. fails to appreciate the advantages of this claimed feature. Thus, the Applicants' submit that the combination of Mogilevsky, Ristad et al. and Bernth et al. cannot make obvious the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations.

#### Amended Independent Claim 1

As stated above, amended independent claim 1 includes the feature of using dictionary looping to spell correct each of the plurality of different segmentations. As noted above, neither Mogilevsky nor Ristad et al. teach this feature.

Bernth et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Bernth et al. merely disclose a system and a method for spellchecking a word taking into account the entire sentence containing the word. Different confusable words in the sentence are identified and each of the words is replaced with a similar sounding word until the sentence makes sense (paragraph [0052], lines 1-2). However, this is different from the Applicants' claimed dictionary looping that begins each search at a starting node and performs different searches "by continually looping back to the starting node" (specification, paragraph [0014], lines 1-3). Consequently, no motivation or suggestion for this claimed feature of the Applicants' invention is provided. Absent this teaching, motivation or suggestion, Bernth et al. cannot render the Applicants' claimed invention obvious (MPEP § 2143.01).

Bernth et al. also fail to appreciate or recognize the advantages of the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations, as discussed above. The Applicants, therefore, submit that

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obviousness cannot be established since the combination of Mogilevsky, Ristad et al. and Bernth et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations. In addition to explicitly lacking this feature, the combination of Mogilevsky, Ristad et al. and Bernth et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination of Mogilevsky, Ristad et al. and Bernth et al. fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Mogilevsky, Ristad et al. and Bernth et al. does not render the Applicants' claimed invention obvious because the references are missing at least one material feature of the Applicants' claimed invention. Consequently, because a *prima facie* case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claim 1 is patentable under 35 U.S.C. § 103(a) over Mogilevsky and Ristad et al. in view of Bernth et al. based on the amendments to claim 1 and the legal and technical arguments set forth above and below. Moreover, claims 2, 5 and 7 depend from amended independent claim 1 and are also nonobvious over Mogilevsky and Ristad et al. in view Bernth et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claims 2, 5 and 7.

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The Office Action rejected claims 3, 4, 8 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Mogilevsky, Ristad et al. and Bernth et al. further in view of Walfish et al. (U.S. Patent 6,047,300). The Office Action stated that Mogilevsky, Ristad et al. and Bernth et al. disclose all elements of the Applicants' claimed invention except that they fail

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to disclose various features that Walfish et al does disclose.

In response, the Applicants respectfully traverse these rejections based on the amendments to claim 1 and the legal and technical analysis above and below. It is the Applicants' position that the combination of Mogilevsky, Ristad et al., Bernth et al. and Walfish et al. does not disclose, either explicitly or implicitly, the material claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations. Further, the combination of Mogilevsky, Ristad et al., Bernth et al. and Walfish et al. fails to appreciate the advantages of this claimed feature. Thus, the Applicants' submit that the combination of Mogilevsky, Ristad et al., Bernth et al. and Walfish et al. cannot make obvious the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations.

#### Amended Independent Claim 1

As stated above, amended independent claim 1 includes the feature of using dictionary looping to spell correct each of the plurality of different segmentations. As noted above, neither Mogilevsky, Ristad et al. nor Bernth et al. teach this feature.

Walfish et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Walfish et al. merely disclose a traditional word spelling checker that replaces a misspelled word with a correctly spelled word (Abstract). Specifically, a user must delimit a word "by entering a punctuation mark or a white space character" and this single word "is compared to the misspelled words" (col. 6, lines 48-51). Nowhere, however, is the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations discussed. Consequently, no motivation or suggestion for this claimed feature of the Applicants' invention is provided. Absent this teaching, motivation or suggestion, Walfish et al. cannot render the Applicants' claimed invention obvious (MPEP § 2143.01).

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Walfish et al. also fail to appreciate or recognize the advantages of the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations, as discussed above. The Applicants, therefore, submit that obviousness cannot be established since the combination of Mogilevsky, Ristad et al., Bernth et al. and Walfish et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of using dictionary looping to spell correct each of the plurality of different segmentations. In addition to explicitly lacking this feature, the combination of Mogilevsky, Ristad et al., Bernth et al. and Walfish et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination of Mogilevsky, Ristad et al., Bernth et al. and Walfish et al. fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Mogilevsky, Ristad et al., Bernth et al. and Walfish et al. does not render the Applicants' claimed invention obvious because the references are missing at least one material feature of the Applicants' claimed invention. Consequently, because a *prima facie* case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claim 1 is patentable under 35 U.S.C. § 103(a) over Mogilevsky, Ristad et al. and Bernth et al. in view of Walfish et al. based on the amendments to claim 1 and the legal and technical arguments set forth above and below. Moreover, claims 3, 4, 8 and 9 depend from amended independent claim 1 and are also nonobvious over Mogilevsky, Ristad et al. and Bernth et al. in view of Walfish et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claims 3, 4, 8 and 9.

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The Office Action rejected claims 11-13, 18, 22 and 23 under 35 U.S.C. § 103(a) as being unpatentable over Mogilevsky in view of Walfish et al..

In response, the Applicants respectfully traverse these rejections based on the amendments to claims 11 and 18 and the legal and technical analysis above and below. It is the Applicants' position that the combination of Mogilevsky and Walfish et al. does not disclose, either explicitly or implicitly, the material claimed features of: (1) for claim 11 – dividing the misspelled phrasal string into a plurality of segmentations containing sub-strings not restricted to a single word; and, (2) for claim 18 -- a segmentation module that divides the phrasal string into a plurality of segmentations, each of the plurality of segmentation containing sub-strings not restricted to a single word, and a looping comparator that performs dictionary looping to correct a segmentation by looping through a dictionary.

#### Amended Independent Claims 11 and 18

Amended independent claims 11 includes a method for spelling correction of a misspelled phrasal string containing words, spaces and characters. The method includes receiving the misspelled phrasal string, and dividing the misspelled phrasal string into a plurality of segmentations containing sub-strings not restricted to a single word. The method further includes comparing each of the plurality of segmentations to entries in a dictionary, and determining a best segmentation from the plurality of segmentations that represents the most probable correct spelling of the misspelled phrasal string.

Amended independent claim 18 includes a phrasal spelling correction system for spelling correction of a phrasal string. The system includes a segmentation module that divides the phrasal string into a plurality of segmentations, each of the plurality of segmentation containing sub-strings not restricted to a single word. The system also includes a looping comparator that performs dictionary looping to correct a segmentation by looping through a dictionary and comparing each of the sub-strings of the segmentation with entries in the dictionary to determine a closest match, and an

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output string containing a corrected segmentation having the lowest cost that represents a correct spelling of the phrasal string.

Segmentation occurs on a phrasal string. The phrasal string "is a string of characters that is not necessarily space-delimited or punctuation-delimited" (specification, paragraph [0006], lines 4-5). This means that the phrasal string can "cross words boundaries and does not necessarily use spaces to define the limits of the string. For example, similar to a space-delimited string a phrasal string may contain single words (such as 'employment') but in addition may contain multiple words [or a phrase] (such as 'employment in Arkansas')." (specification, paragraph [0011], lines 4-8).

By way of example, "given the [phrasal] string 'pintures ff marylinnMonroe', one segmentation is [pintures ff] marylinnMonroe] consisting of sub-string (1) = 'pintures ff' and sub-string (2) = ' marylinnMonroe'" (specification, paragraph [0044], lines 8-12). Note that the sub-strings are not restricted to words, but also contains spaces and phrases. The vertical line "|" indicates where the segmentation of the phrasal string occurs. A sub-string is the string between the vertical lines.

Current spelling correction techniques were developed for spelling correction of text documents and identify words within the text by determining where spaces occur. In other words, a word within the text document is identified as a space-delimited string. In general, a space-delimited string includes a string of letters that is set apart by spaces or punctuation characters. This means that current spelling correction techniques consider the letters between the spaces (i.e. a space-delimited string) to be a "word" (specification, paragraph [0004], lines 7-13).

The Applicants' claimed invention segments a phrasal string into a number of different segmentations. Each segmentation contains a number of contiguous sub-strings (specification, paragraph [0012], lines 10-12). The sub-strings are not necessarily restricted to a single word. In fact, the sub-strings may "contain a plurality

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of words and spaces" (specification, paragraph [0028], lines 2-4). The sub-strings can even be empty (specification, paragraph [0065], lines 4-5). In other words, the sub-strings "are not restricted to text between spaces" (specification, paragraph [0033], lines 3-4), but may contain multiple words or phrases, spaces, or even be empty.

In contrast, Mogilevsky specifies a range of a document, divides the range in a plurality of single complete words, and performs spell checking on each single word. In particular, Mogilevsky initially "specifies a range of characters in a document" to be spell checked (col. 4, lines 44-45). From this range of characters, "the spelling core identifies complete words" (col. 4, lines 51-52). Each complete word is identified by analyzing "transitions between types of characters to identify a complete word" (col. 4, lines 53-54). For each of the words identified, "spell core passes the [single] word to spell.dll for verification" (col. 4, lines 54-55; emphasis added). Given this single word to spell check, "spell.dll can return a variety of status codes . . ." (col. 4, lines 57-58).

On the other hand, the Applicants' claimed invention allows segmenting the phrasal string into a plurality of different segmentations, with each segmentation containing sub-strings that are not restricted to a single word. In other words, in contrast to Mogilevsky, the Applicants' claimed sub-strings can contain more than one word, a phrase, a space, or be empty. This is different from what is taught in Mogilevsky, which requires that range of characters of a document be separated into single words.

Walfish et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Walfish et al. merely disclose a traditional word spelling checker that replaces a misspelled word with a correctly spelled word (Abstract). Specifically, a user must delimit a word "by entering a punctuation mark or a white space character" and this single word "is compared to the misspelled words" (col. 6, lines 48-51). Nowhere, however, is the Applicants' claimed feature of dividing a phrasal string into a plurality of different segmentations containing sub-strings not restricted to a single word discussed. Consequently, no motivation or suggestion for this claimed feature of the Applicants' invention is provided. Absent this teaching,

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motivation or suggestion, Walfish et al. cannot render the Applicants' claimed invention obvious (MPEP § 2143.01).

Mogilevsky and Walfish et al. also both fail to appreciate or recognize the advantages of the Applicants' claimed feature of dividing a phrasal string into a plurality of different segmentations containing sub-strings not restricted to a single word. More specifically, the use of segmentation having sub-strings not restricted to a single word provide reliable and effective spell-checking a phrasal string. For example, traditional spelling checking techniques were developed with the text document in mind, and do not work well "when they are applied to a string of misspelled words" (specification, paragraph [0006], lines 1-3). These traditional techniques "perform spelling correction based on space-delimited strings and are unreliable and ineffective in situations where a user is typing a phrasal string (such as a search engine query) and accidentally inserts or omits a space" (specification, paragraph [0006], lines 15-18). Neither Mogilevsky nor Walfish et al. discuss or appreciate these advantages of the Applicants' claimed feature of dividing the phrasal string into a plurality of different segmentations containing sub-strings not restricted to a single word.

The Applicants, therefore, submit that obviousness cannot be established since the combination of Mogilevsky and Walfish et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of dividing the phrasal string into a plurality of different segmentations containing sub-strings not restricted to a single word. In addition to explicitly lacking this feature, the combination of Mogilevsky and Walfish et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination of Mogilevsky and Walfish et al. fails to appreciate advantages of this claimed feature.

Regarding claim 18, the arguments provided with above concerning the claimed feature of a segmentation module that divides the phrasal string into a plurality of segmentations, each of the plurality of segmentation containing sub-strings not

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restricted to a single word, and a looping comparator that performs dictionary looping to correct a segmentation by looping through a dictionary also apply.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Mogilevsky and Walfish et al. does not render the Applicants' claimed invention obvious because the references are missing at least one material feature of the Applicants' claimed invention. Consequently, because a *prima facie* case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claims 11 and 18 are patentable under 35 U.S.C. § 103(a) over Mogilevsky in view of Walfish et al. based on the amendments to claims 11 and 18 and the legal and technical arguments set forth above and below. Moreover, claims 12 and 13 depend from amended independent claim 11 and claims 22 and 23 depend from amended independent claim 18 and are also nonobvious over Mogilevsky in view of Walfish et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claims 11-13, 18, 22 and 23.

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The Office Action rejected claims 14-16, 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Mogilevsky and Walfish et al. and further in view of Ristad et al.

In response, the Applicants respectfully traverse these rejections based on the amendments to claims 11 and 18 and the legal and technical analysis above and below. It is the Applicants' position that the combination of Mogilevsky, Walfish et al. and Ristad et al. does not disclose, either explicitly or implicitly, the material claimed features discussed above in relation to claims 11 and 18. Further, the combination of

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Mogilevsky, Walfish et al. and Ristad et al. fails to appreciate the advantages of these claimed features. Thus, the Applicants' submit that the combination of Mogilevsky, Walfish et al. and Ristad et al. cannot make obvious these claimed features.

As discussed above, neither Mogilevsky nor Walfish et al. disclose the claimed features discussed above in relation to claims 11 and 18. Further, Ristad et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Ristad et al. merely disclose a system and a method for determining a similarity of two strings. However, the Applicants' claimed feature of segmenting the phrasal string into a plurality of different segmentations containing sub-strings not restricted to a single word is not discussed. Consequently, no motivation or suggestion for this claimed feature of the Applicants' invention is provided. Absent this teaching, motivation or suggestion, Ristad et al. cannot render the Applicants' claimed invention obvious (MPEP § 2143.01).

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Mogilevsky, Walfish et al. and Ristad et al. does not render the Applicants' claimed invention obvious because the references are missing at least one material feature of the Applicants' claimed invention. Consequently, because a *prima facie* case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claims 11 and 18 are patentable under 35 U.S.C. § 103(a) over Mogilevsky and Walfish et al. in view of Ristad et al. based on the amendments to claims 11 and 18 and the legal and technical arguments set forth above and below. Moreover, claims 14-16 depend from amended independent claim 11 and claims 19 and 20 depend from amended independent claim 18 and are also nonobvious over Mogilevsky and Walfish et al. in view of Ristad et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination,

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reconsideration and withdrawal of the rejection of claims 14-16, 19 and 20.

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The Office Action rejected claim 17 under 35 U.S.C. § 103(a) as being unpatentable over Mogilevsky, Walfish et al. and Ristad et al. and further in view of Ishikawa et al. (U.S. Patent No. 5,812,863).

In response, the Applicants respectfully traverse these rejections based on the amendments to claim 11 and the legal and technical analysis above and below. As argued above, Mogilevsky, Walfish et al. and Ristad et al. all fail to disclose the Applicants' claimed feature of dividing the misspelled phrasal string into a plurality of segmentations containing sub-strings not restricted to a single word.

Ishikawa et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Ishikawa et al. merely disclose a traditional word spelling checker that replaces a misspelled word with a correctly spelled word. Nowhere, however, is the Applicants' claimed feature of dividing the misspelled phrasal string into a plurality of segmentations containing sub-strings not restricted to a single word discussed. Consequently, no motivation or suggestion for this claimed feature of the Applicants' invention is provided. Absent this teaching, motivation or suggestion, Ishikawa et al. cannot render the Applicants' claimed invention obvious (MPEP § 2143.01).

Ishikawa et al. also fail to appreciate or recognize the advantages of the Applicants' claimed feature. The Applicants, therefore, submit that obviousness cannot be established since the combination of Mogilevsky, Walfish et al., Ristad et al. and Ishikawa et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of dividing the misspelled phrasal string into a plurality of segmentations containing sub-strings not restricted to a single word. In addition to explicitly lacking this feature, the combination of Mogilevsky, Walfish et al., Ristad et al.

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and Ishikawa et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination of Mogilevsky, Walfish et al., Ristad et al. and Ishikawa et al. fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Mogilevsky, Walfish et al., Ristad et al. and Ishikawa et al. does not render the Applicants' claimed invention obvious because the references are missing at least one material feature of the Applicants' claimed invention. Consequently, because a *prima facie* case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claim 11 is patentable under 35 U.S.C. § 103(a) over Mogilevsky, Walfish et al. and Ristad et al. in view of Ishikawa et al. based on the amendments to claim 11 and the legal and technical arguments set forth above and below. Moreover, claim 17 depends from amended independent claim 11 and is also nonobvious over Mogilevsky, Walfish et al. and Ristad et al. in view of Walfish et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claim 17.

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The Office Action rejected claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Mogilevsky, Walfish et al. and Ristad et al. and further in view of Ishikawa et al. and Gilai et al. (U.S. Patent No. 6,018,736).

In response, the Applicants respectfully traverse these rejections based on the amendments to claim 18 and the legal and technical analysis above and below. As argued above, Mogilevsky, Walfish et al., Ristad et al. and Ishikawa et al. all fail to disclose the Applicants' claimed feature of a segmentation module that divides the phrasal string

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into a plurality of segmentations, each of the plurality of segmentation containing sub-strings not restricted to a single word.

Gilai et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Gilai et al. merely disclose a database accessing system that analyzes single words to access a database. Specifically, a similar word finder operative analyzes input words to find similar matches in the database (Abstract). Nowhere, however, is the Applicants' claimed feature discussed of a segmentation module that divides the phrasal string into a plurality of segmentations, each of the plurality of segmentation containing sub-strings not restricted to a single word. Consequently, no motivation or suggestion for this claimed feature of the Applicants' invention is provided. Absent this teaching, motivation or suggestion, Gilai et al. cannot render the Applicants' claimed invention obvious (MPEP § 2143.01).

Gilai et al. also fail to appreciate or recognize the advantages of the Applicants' claimed feature. The Applicants, therefore, submit that obviousness cannot be established since the combination of Mogilevsky, Walfish et al., Ristad et al., Ishikawa et al. and Gilai et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of a segmentation module that divides the phrasal string into a plurality of segmentations, each of the plurality of segmentation containing sub-strings not restricted to a single word. In addition to explicitly lacking this feature, the combination of Mogilevsky, Walfish et al., Ristad et al., Ishikawa et al. and Gilai et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination of Mogilevsky, Walfish et al., Ristad et al., Ishikawa et al. and Gilai et al. fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Mogilevsky, Walfish et al., Ristad et al., Ishikawa et al. and Gilai et al. does not render the Applicants' claimed invention obvious because the references are missing at least one material feature of the Applicants' claimed invention. Consequently, because a *prima facie* case of obviousness cannot be established due to the lack of "some

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teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claim 18 is patentable under 35 U.S.C. § 103(a) over Mogilevsky, Walfish et al. and Ristad et al. further in view of Ishikawa et al. and Gilai et al. based on the amendments to claim 18 and the legal and technical arguments set forth above and below. Moreover, claim 21 depends from amended independent claim 18 and is also nonobvious over Mogilevsky, Walfish et al. and Ristad et al. in view of Walfish et al. and Gilai et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claim 21.

#### Section 102(a) Rejections

The Office Action rejected claims 1-23 under 35 U.S.C. § 102(a) as being anticipated by a paper by Eric Brill and Robert C. Moore entitled "An Improved Error Model for Noisy Channel Spelling Correction" (Brill et al.). The Office Action stated that Brill et al. disclose all the elements or features of the Applicants' claimed invention.

In response, the Applicant respectfully traverses these rejections based on the amendments to claims 1, 11 and 18 and the legal and technical analysis above and below. In general, the Applicants submit that Brill et al. is missing at least one element or feature of the Applicants' claimed invention. In particular, as explained in detail above, Brill et al. do not disclose, either explicitly or implicitly, the following material claimed features:

- (a) for amended independent claim 1, the feature of "using dictionary looping to spell correct each of the plurality of different segmentations;"
- (b) for amended independent claim 11, the feature of "dividing the misspelled phrasal string into a plurality of segmentations containing sub-strings not

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restricted to a single word;"

(c) for amended independent claim 18, the feature of "a segmentation module that divides the phrasal string into a plurality of segmentations, each of the plurality of segmentation containing sub-strings not restricted to a single word"; and the feature of "a looping comparator that performs dictionary looping to correct a segmentation by looping through a dictionary."

In contrast to the Applicants' claimed features, Brill et al. nowhere disclose using dictionary looping to spell correct. Moreover, Brill et al. nowhere disclose dividing a misspelled phrasal string into a plurality of segmentations containing sub-strings not restricted to a single word. In contrast, Brill et al. teaches "automatically training a system to correct generic single word spelling errors" (page 1, col. 2, Section 1, lines 1-3). In other words, Brill et al. is restricted to a single word at a time. Any partitioning performed is done on a single word. In particular, "a person picks a word to generate. Then she picks a partition of the characters of that word" (page 3, left column, second paragraph, lines 3-5). The Applicants' claimed features recited above are missing from Brill et al.

The Applicant, therefore, respectfully traverse this rejection of amended independent claims 1, 11 and 18 because Brill et al. do not teach, either explicitly or implicitly, the material claimed features recited above. Because of these missing features, the §102 rejections cannot stand.

Because the Applicants' claimed invention includes features neither explicitly disclosed nor suggested by Brill et al., the Applicants respectfully submit that the rejections of independent claims 1, 11 and 18 under 35 U.S.C. § 102(a) as being anticipated by Brill et al. has been overcome. Moreover, rejected claims 2-10 depend from amended independent claim 1, rejected claims 12-17 depend from amended independent claim 11, and rejected claims 19-23 depend from amended independent claim 18 and are therefore also novel over Brill et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and

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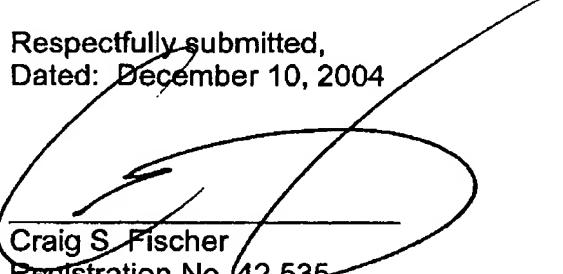
withdrawal of the rejection of claims 1-23 under 35 U.S.C. § 102(a) as being anticipated by Brill et al.

Conclusion

In view of the amendments to claims 1, 11 and 18 and the arguments set forth above, the Applicants submit that claims 1-23 of the subject application are in condition for immediate allowance. In addition, as argued above, the Applicants believe that new claims 24-27 are in condition for immediate allowance. The Examiner, therefore, is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue.

In an effort to expedite and further the prosecution of the subject application, the Applicants kindly invite the Examiner to telephone the Applicants' attorney at (805) 278-8855 if the Examiner has any comments, questions or concerns, wishes to discuss any aspect of the prosecution of this application, or desires any degree of clarification of this response.

Respectfully submitted,  
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Craig S. Fischer  
Registration No. 42,535  
Attorney for Applicants

LYON & HARR, L.L.P.  
300 East Esplanade Drive, Suite 800  
Oxnard, CA 93036-1274  
Tel: (805) 278-8855  
Fax: (805) 278-8064